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FAX MEMORANDUM

TO: Mr. Robert H. Schneider

ATTENTION:

FAX #:

FROM: Al Vargas

DATE: November 5, 2004

NUMBER OF PAGES (Including Cover Sheet): 15

COMMENTS:
Comments on the Draft General Order for Large Dairy Facilities

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STATE OF CALIFORNIA
DEPARTMENT OF FOOD AND AGRICULTURE
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ARNOLD SCHWARZENEGGER, Governor
A.G. KAWAMURA, Secretary

November 4, 2004

Mr. Robert H. Schneider
Board Chairman
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670 - 6114

Dear Chairman Schneider:

Thank you for the opportunity to comment on the Administrative Draft General Waste Discharge Requirements (WDR) for large dairy operations in the Central Valley. These regulations when implemented have a potential to radically alter dairy operations in the Central Valley. These regulations will place a high level of oversight and control on dairy production and greatly increase documentation and record keeping and efforts on the part of the producer in implementing. It will also require substantial investment on the part of the dairy producer and have significant financial impacts to the industry in the Central Valley as a whole. To that end, it is important that we take our time and fully evaluate these regulations and explore opportunities for alternative processes that decrease the burdens on the producer while achieving the environmental objectives. With this in mind, we urge you to extend the adoption schedule for the General Order and enter into a dialogue with the California Dairy Quality Assurance Program (CDQAP) and other interested parties to develop these opportunities. We offer the expertise of our staff to assist you in this process.

Because of the limited comment period, we focus here on major policy issues for the Board's consideration. Additional, detailed comments will follow. We hope to develop economic information that will assist your staff in crafting a workable control program.

Economic Considerations

Implementation of Agricultural Control Program

Typically in regulating discharges, the RWQCB will adopt WDR that incorporate provisions of the basin plan including the beneficial uses to be protected, the water quality objectives identified to protect those uses, and any implementation plan. Thus, the WDR is a regulatory tool from which the Basin Plan provisions are implemented and put into action. The implementation plan for achieving water quality objectives in the Basin Plan may include but not limited to actions that may be necessary to achieve water quality objectives, a schedule for the actions, and a monitoring program to ensure compliance with the water quality objectives (Water Code §13242).

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In the case of this draft Order, there is no existing implementation plan in the Basin Plan. The producer is however, required to develop plans that will guide the design, management, and operations of his/her facility. These plans include the Nutrient Management Plans (NMP), the Waste Management Plan (WMP) and the monitoring plan. These plans are far-reaching and comprehensive in nature and form the foundation for the draft Order. There will be a significant cost to the producer in preparing and implementing these plans, as the plans are to be prepared by registered professionals. In essence, these plans and other provisions in the Order constitute a "program of implementation" for protecting water quality related to large dairy operations in the Central Valley. Within the meaning of Water Code §§13050(j)(3) and 13242, this program of implementation belongs in the Basin Plan. Yet these plans have not been and it does not appear that RWQCB staff has any intention of incorporating them into the Basin Plan by way of an implementation plan.

This Order is expected to impact approximately 1,000 dairies in the Central Valley. It is also fair to say that this Order will set the standard for how the remaining dairies in the Central Valley will be regulated. Thus, this Order with its associated provisions primarily the NMP, WMP, and the monitoring program will have significant economic consequences to the dairy industry in the Central Valley. These economic impacts need to be evaluated and considered. In fact the Water Code provides for such an evaluation by requiring the RWQCB prior to adopting any agricultural water quality control program, to consider the costs and potential sources of financing. In addition this analysis must be incorporated into the Basin Plan (Water Code §13241). This has not been accomplished in this proposal.

Water Quality Objectives

The Fact Sheet prepared for this General Order states that with respect to agricultural beneficial uses, various external documents (external to the Basin Plan) and guidance will be used to interpret the narrative water quality objective in the Basin Plan. In the past, the RWQCB has interpreted provisions in Water Code §13263(a) to allow the inclusion of water quality objectives in WDR that were not adopted into the Basin Plan as per Water Code §§ 13050(j) and 13241 and for the purpose of protecting a beneficial use. This interpretation and the appropriateness of this procedure are debatable. Nevertheless, this interpretation is supported by State Water Resources Control Board (SWRCB) chief counsel opinion and has been memorialized in a guidance memorandum[1]. In this guidance, the RWQCB may incorporate water quality objectives in the basin Plan into WDR or alternatively, in the absence of applicable water quality objectives in the Basin Plan, the RWQCB may develop water quality objectives on a case-by-case basis to incorporate into WDR. In either case, the Chief Counsel

[1] Memorandum January 4, 1994 from Chief Counsel Lee Atwater, SWRCB to RWQCB Executive Officers

recommended that an economic impact analysis be conducted and provides a process for doing so.

In the Fact Sheet, an analysis is presented of the appropriate water quality objectives in consideration of agricultural, municipal and industrial supply, aquatic life, and contact recreation. Some of the water quality objectives derived to protect these uses are from the Basin Plan but most are from other agency guidance or external reports. If it is the intent of the RWQCB to Incorporates these water quality objectives into the WDR it should state so explicitly in the General Order and preferably summarize the applicable objectives in a table. Furthermore, it is clear from the guidance from SWRCB chief counsel that an economic impact analysis needs to be conducted for water quality objectives incorporated into WDR that were not derived directly from the Basin Plan. This analysis was not presented in this draft Order. It should also be noted that incorporation of water quality objectives into WDR from sources other than the Basin Plan have not had the benefit of review under the Administrative Procedures Act Including approval by the SWRCB, and the Office of Administrative Law.

Export of Manure

As a result of this Order, some dairy operations may find themselves in the situation in which there may be an excess of nutrients produced at the facility for which there may be not sufficient cropland to assimilate. This situation was documented in a report of the USDA[2]. In these circumstances, the producer will need to export nutrients to maintain the same level of production. The export of manure for incorporation into other agricultural land is beneficial due to positive impacts on soil physical and chemical properties and should be encouraged and it is the most economical means available to a dairy producer to reduce the excess nutrient burden.

This Order, however, requires that producers enter into written contracts with the recipient of the manure. Furthermore, the recipient is required to developed "specific plans" for the manure if it is to be used on cropland. What is required in specific plans needs to be clarified. Nevertheless, these requirements are likely to discourage some potential recipients of manure from taking manure from a producer, thereby making it more difficult for a dairy producer to deal with excess nutrient at his facility.

Of more concern is the requirement that the producer provide the most recent analysis of manure nitrogen and phosphorus content to the recipient. Making a claim as to the nutrient content of the manure triggers fertilizer materials regulations (Title 3 California Code of Regulations, Article 11). These regulations require the licensing of the commercial fertilizer distributor. Further, the regulations classify the material as a commercial fertilizer and the manure is then subject to labeling requirements. These

[2] Kellog, Robert L., et al., December 2000. USDA. Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients: Spatial and Temporal Trends for the United States

include analysis of the manure for macro and micronutrients, and liming material guarantee. Furthermore, the sale of the manure is then subject to a mill assessment. These requirements are likely to discourage the export of manure form dairy facilities and create difficulties to facilities that may produce nutrients in excess of available cropland.

We recognize that to a certain extent, the federal CAFO Rule drives these requirements. We urge the RWQCB to enter into dialogue with the USEPA to evaluate the impacts of these requirements and to search out acceptable alternatives.

Water Quality Planning

The WDR as noted, contains water quality objectives. These objectives are not to be exceeded even in the event of a permissible discharge. A discharge is allowed if the facility is designed, constructed and operated to contain a 25-year, 24-hour storm. The RWQCB goes one step beyond the federal requirement by prohibiting the exceedance of water quality objectives even in the event of a discharge from unusual circumstance. No consideration has been given to allow for mixing zone, as it appears that the point of compliance is the discharge point. Thus, a discharge that occurs at the end of a field from storm water runoff into a roadside ditch will be in violation of the Order if it exceeds the water quality objectives noted in the WDR or any water quality objective adopted into the Basin Plan. Note that these water quality objectives were designed for the most conservation protection of uses. These include agricultural use protection for the most salt sensitive crops, drinking water for the protection of taste, aquatic life for the protection of fisheries, and contact recreation. A roadside channel that conveys storm water runoff from adjacent roads and fields and only has flow during the winter clearly does not have these beneficial uses.

In reality the point of application should be a water body that truly has those beneficial uses or has the potential for those uses. Here, after consideration of a mixing zone, the Basin Plan water quality objectives and any other case specific water quality objectives should apply. This does not mean that unregulated discharges should be allowed to take place from a dairy operation. It just means that the RWQCB needs to conduct the proper planning so that the appropriate uses are assigned to the different levels of conveyance channels.

This assigning of appropriate uses and corresponding beneficial uses goes to the comments made to the Department in a letter to the RWQCB on May 23, 2003, regarding the Waiver from WDR for Irrigated Lands. We go into a detailed discussion of this issue and ask that you incorporate those comments (Issue 2: Lack of a Policy for Water Bodies Dominated by Agricultural Flows) into our comments for the draft Order.

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It should be noted that because this is a federal permit (NPDES), it is subject to the citizen lawsuit provisions in the Water Code. As such, third parties may challenge any violation of this Order.

In summary, the RWQCB staff needs to evaluate the economic impacts and take them into consideration to the extent that the law provides for. We urge to consider the potential consequences of your proposal with respect to the facilitation of manure export from dairy facilities. The extent that we can help in resolution of this issue, we offer our services. Lastly, as we have noted before the appropriate planning needs to be conducted so that the appropriate uses and beneficial uses are assigned to water bodies whose flows are dominated by agricultural flows.

Thank you once again for the opportunity to comment on the draft Order. We renew our offer to assist your staff in any way possible to develop a control program that achieves your environmental objectives and minimizes burdens to the dairy producer.

We appreciate your consideration to our comments and the alternatives we propose.

Sincerely,

Steven Shaffer
Director

Enclosure

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STATE OF CALIFORNIA
GRAY DAVIS, Governor
DEPARTMENT OF FOOD AND AGRICULTURE

May 23, 2003

Mr. Robert H. Schneider
Regional Water Quality Control Board
Central Valley
3443 Routier Road, Suite A
Sacramento, CA 95827

Dear Mr. Schneider:

Thank you for extending the comment period on this very important matter and deferring final action until the July Board meeting. We support the direction the Board provided the staff to work with the stakeholders at developing alternatives for consideration. We would appreciate a seat at that table.

Attached are our comments. We did not directly address the 12 issues enumerated in your May 2, 2003 letter. However, we have detailed five issues of our own and embodied in this discussion we address to some extent most of the issues you raised.

In summary, the Department supports a watershed process approach to addressing water quality issues from irrigated lands. The process should not, however, be prescriptive and should provide as much flexibility to the watershed groups in reaching water quality goals. The Regional Water Quality Control Board should limit its orders to setting goals, milestones, and schedules. The reporting requirements should be minimized and directed at providing verification that the milestones and goals are being met. The RWQCB should include alternative steps in the event that a watershed groups fails to make a good faith effort. These alternatives would provide an incentive to the group to diligently work to meeting their obligations. The watershed process and the agricultural community work best when given the flexibility to develop their own solutions. We believe this approach is most consistent with Water Code §13360.

The RWQCB should not prescribe detail-monitoring requirements. Every watershed is unique and watershed and sub-watersheds must be free to use a scientific rationale at developing a monitoring plan for the location, frequency, and parameters to be evaluated. Additionally, the RWQCB should only provide quality assurance requirements for data to be submitted for the verification of compliance with milestones and goals. The level of assurance is dependent on the data quality objectives. While all data collected needs some level of assurance, not all data requires the level that is being requested by the RWQCB. Reporting requirements need to be consistent with Water Code §13267(b)(1). We propose an alternative-monitoring framework for your consideration.

Even more fundamental than the previously discussed issues is the need to develop a policy for water bodies dominated by agricultural flows, and to assign appropriate uses and levels of protection to all waters that may receive agricultural drainage. Beneficial uses have been identified for a limited number of water bodies. By virtue of the so-called "tributary rule", the

RWQCB has designated uses to all of the water bodies. These uses are not necessarily correct. This was recognized in 1991 when the State Water Resources Control Board developed the Inland Surface Water Plan, and as a component of this plan, developed a policy for water bodies whose flows are dominated by agricultural flows. This policy recognized that many water bodies whose flows are dominated by agricultural discharges and supply water have been constructed (artificial channels) or are highly modified natural channels. Unfortunately, the courts overturned the 1991 Plan and the State Board has never developed another one in its place.

Due to the extensive alteration and management of the hydrologic system, agricultural flows provide most if not the only flow in these channels. As such, there are incidental beneficial uses that these flows create or augment. A policy for agriculturally dominated water bodies should recognize the uniqueness of this system and not place priority on the incidental uses at the exclusion of the function for which the channels have been constructed or modified and for which they have served for decades. We suggest for your consideration a framework from which to develop an agricultural water body policy and recommend the RWQCB use the tools provided in the Water Quality Standards regulations (40CFR 131.10) to the Clean Water Act to assign proper beneficial uses.

We appreciate your consideration to our comments and the alternatives we propose.

Sincerely,

Daniel Webb
Deputy Secretary

cc: Winston H. Hickox, Secretary for Environmental Protection
Arthur G. Baggett, Jr., Chair, State Water Resources Control Board

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California Department of Food and Agriculture

Comments to the Central Valley Regional Water Quality Control Board on the Proposed Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Within the Central Valley Region

May 23, 2003

Issue 1: Promote the use of the watershed approach, minimizing regulatory involvement and maximize flexibility to the watershed participants.

The RWQCB should focus on results and not process. In doing so, it will provide maximum flexibility to the watershed groups in meeting water quality obligations. The objective of the RWQCB should be to establish goals, milestones, and alternative mechanisms in the event that goals are not met. In essence, this process will show the best results if the RWQCB establishes the goals and milestones, and the accountability mechanisms and lets the watershed groups do the work, on their own terms, in meeting the goals. This approach provides the best mix of regulatory oversight and the incentives needed for a self-directed watershed approach to work. In Issue 5 we lay out a process for monitoring and implementation that we believe provides for that right combination.

Issue 2: Lack of a Policy for Water Bodies Dominated by Agricultural Flows

California's natural hydrology has been greatly altered through flood control and water supply projects. Water is moved from one watershed to another and from one part of the state to the other. Spring snowmelt and runoff is captured and stored for distribution during the seasonal dry periods. Ninety percent of the wetlands have been drained and the sloughs that once drained those wetlands no longer serve the same function.

Water, from this managed hydrology is conveyed through a complex network of natural stream channels, modified natural channels and man made channels. Most of the alterations, which began in the era of the Miller and Lux Land Company more than 150 years ago, were in place by the late 1960s with the completion of the major elements of the State Water Project. The state's economy and culture has developed as a result of these modifications. It is not reasonable to expect that the natural hydrology and native ecology can be restored.

Agriculture, for its part has flourished and benefited from altering the hydrology. Sloughs that once conveyed flood drainage from wetlands now convey agricultural supply and drainage. Agriculture producers, long-ago altered natural water bodies and constructed additional channels to convey water supply and drainage. The conveyance of irrigation supplies and drainage are intertwined. Flow in these channels provides for incidental beneficial uses such as aquatic habitat that would not otherwise exist or would be diminished except for the flows that agriculture production provides.

It is also not reasonable to ignore environmental quality. However, the limitations of the modified system need to be recognized. Channels that have been straighten and deepened and which were built to convey drainage cannot support full aquatic life uses, drinking water, or contact recreation. In regulating water quality in the altered hydrologic conveyance, the aquatic life value and other incidental beneficial uses that agricultural production provides should not take priority over the function for which these channels now serve and have served for decades.

The proposals (December 5 and April 24) put forward by the Regional Water Quality Control Board (RWQCB) staff suffer from the lack of recognition of the nature of the altered hydrology and its limitations to meet traditional beneficial uses. Instead, the plan proposes to impose Basin Plan standards on water bodies whose flows are dominated by agricultural flows. The RWQCB needs to develop a policy for water bodies whose flows are dominated by agricultural flows that recognizes and places a higher priority on the function of the water body for which is was constructed or modified over the incidental uses that the water bodies provide as a result of agricultural production.

A policy for water bodies dominated by agricultural flows was in place in the 1991 Inland Surface Water Plan (ISWP). This policy recognized the uniqueness of the agricultural hydrology. The USEPA had agreed in principal with this policy but a few issues remained to be resolved. Unfortunately, the courts struck down the ISWP. In 1994 the SWRCB convened work groups to advise it on managing non-point source issues including irrigation, nutrient management, pesticides, etc. The recommendations of these work groups were never implemented. Again, in 1995, the SWRCB convened advisory task forces on various issues related to the development of the ISWP. One such task force looked at the implementation of water quality standards in agricultural waters. This task force was made up of diverse stakeholders including agricultural and environmental stakeholders, USEPA, SWRCB, RWQCB, US Fish and Wildlife Service, etc. Many excellent consensus recommendations emerge from this process that resemble the agricultural water body policy in the defunct ISWP. Unfortunately, the SWRCB never implemented these recommendations, as it has never developed an ISWP. Instead the SWRCB has developed an implementation plan to the USEPA promulgation of toxic standards for California. This plan, however, does not include a policy for water bodies dominated by flows from agriculture. So nearly a decade later we do not have an agricultural water body policy in place and yet are proceeding with enforcing basin plan standards on water bodies dominated by agricultural flows.

At this stage of the process, the RWQCB has the opportunity to do this right (place the horse before the cart) by establishing a policy that recognizes the uniqueness of water bodies dominated by agricultural flows. Such a framework already exists in the recommendations of the 1995 ISWP – Agricultural Water Bodies Task Force. Among the important elements of the framework is the categorization of water bodies depending on the nature of the water body from natural water body to constructed agricultural drain.

Beneficial uses and water quality objectives are then assigned according to the category of the water body recognizing the limitations and placing a priority on the function of the water body over the incidental uses. This will ensure that agriculture will continue to function and use the channels, which it created while maintaining flows and improving water quality in those channels to maximize the incidental beneficial uses provided in those channels.

The report of the task force also contains recommendations for implementation based on a hierarchy of protecting the downstream beneficial uses in a natural water body followed by agricultural dominated natural water bodies and lastly the constructed water bodies. The report recommends a two-stage process in which assessment and prioritization is conducted first and then actions by the RWQCB according to the Non-Point Source Plan and the watershed management program. This framework has the advantage of having been developed by a diverse stakeholder group including federal and state regulators and should be further refined through a continued stakeholder process and form the basis by which the RWQCB addresses discharges from irrigated lands.

Issue 3: Recognition of the altered hydrology in the loss of assimilative capacity and the importation of poorer quality water in the main stem streams.

The natural water bodies downstream of the agricultural conveyance system, which are the receiving waters for agricultural discharges, have also been impacted by the modification of the natural hydrology. Flows have been reduced and in some cases eliminated most of the time. This has impacted the assimilative capacity of these water bodies. A case in point is the San Joaquin River downstream of Gravelly Ford to the confluence with the Merced River. In this portion of the river and the reach from the Mendota Pool to the Merced River confluence in particular, the river contains primarily groundwater accretions. These accretions are not able to meet basin plan standards. Thus, the river cannot accept additional discharges without exceeding water quality standards. To complicate matters, riparian water right holders to this portion of the river have traded their water rights for imported water from the Delta via the Central Valley Project. This water is of poorer quality, primarily with respect to trace elements and salinity and at times does not meet water quality objectives. This is the nature of the complex modified and managed hydrology.

The RWQCB needs to take these realities into consideration in designating beneficial uses for these water bodies. This has not been considered under the current designations. The RWQCB should use the tools provided in the Water Quality Standards (40 CFR 131.10) regulations to the Federal Clean Water Act to designate the appropriate uses. These regulations provide a process for designating subcategories of uses, seasonal uses, and for removing designated uses that are not existing uses. Among the factors that can be considered and which may be appropriate are naturally occurring pollutant concentrations, low flow conditions, hydro-modifications, physical conditions, such as

the absence of appropriate habitat to support all levels of aquatic life, and economic considerations. These tools may also be appropriate for designating uses for the constructed and modified water bodies used to convey agricultural flows.

It also must be recognized that there are limits to the efforts to be undertaken in attaining the uses. For non-point sources these are limited to the implementation of "cost-effective and reasonable best management practices" (40 CFR 131.10(h)(2)). In the case of the Grasslands By-Pass Area, the farmers, in improving water quality, have undertaken extraordinary measures. These measures include recycling of drainage, alternative cropping systems, irrigation improvements, purchase of additional land for drainage reuse, and studies into treatment systems. Additionally, they have instituted a tiered water pricing structure to encourage conservation and a tradable load program. This has come at a high cost: $10 per acre for regional improvements and $10 acre for on-farm improvements. Additionally, the Bureau of Reclamation contributes about $5 per ace for the regional monitoring. These costs significantly reduce and can often exceed grower profit margins.

Issue 4: The request for information under the Monitoring and Reporting Program must be consistent with the Water Code. Data reporting should be limited to only that which is necessary to meet program objectives.

Section 13267(b)(1) of the Water Code[1] requires the RWQCB to be measured in its request for information. The information should have specific purpose and implied in this is that there should be a connection to water quality improvement. The RWQCB is requesting an inordinate amount of data up-front, including chemical usage, cropping patterns, etc. It is doubtful that with its limited staff the RWQCB will be able to review, compile and utilized this data in a meaningful way. Even with adequate staffing, it is difficult to determine how this data could be used to promote water quality improvements. The RWQCB should limit its data request to data, which it can manage and which can be used to promote water quality improvements. The requests for data should be kept to a minimum so as not to burden the watershed groups with data gathering rather than water quality improvement implementation.

As an example, not all pesticide usage needs to be reported. Some pesticides, because of the method by which they are applied, and their chemical and physical characteristics, may have a low potential to contaminate surface waters (e.g. methyl bromide). The reporting, if at all should come after initial assessment of the watershed has been conducted and through coordination of the County Agricultural Commissioners and the Department of Pesticide Regulation using the existing Pesticide Use Reports.

[1] Water Code §13267(b)(1) - (...The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

Issue 5: The Monitoring Program is too prescriptive. Every watershed and sub-watershed is unique and a monitoring program is a site-specific issue.

Every watershed and sub-watershed is unique with respect to cropping patterns, chemical usage, topography, geology and soils, irrigation practices, and other land use practices that can influence the quality of water. A sampling plan is designed according to the questions one is trying to answer. For efficiency and economy, a scientific rationale is used in designing a plan over a statistical design. In a scientifically based design, the existing information is considered along with land uses, geography, land-use practices (cropping, chemical use, irritations practices, etc.) and any other factors that may influence water quality. Based on these considerations, strategic sampling locations are selected. For example, if one is trying to answer the question of whether water quality has been impacted by farming activities, one may choose to target sampling at outflow locations of the various sub-watersheds. If one or more sub-watersheds is found to be impacted, new questions arise and a new sampling design will need to be developed.

With respect to sampling timing and frequency, this may be event driven such as for storms of certain intensities occurring and during the irrigation season. The frequency of sampling is driven by the data quality objectives, and the statistical considerations needed to adequately characterize the water quality parameters. For constituents to be evaluated, land use factors can be considered in improving the efficiency of the monitoring program. For example, pathogens would not be included in a monitoring program if there were little or no animal agriculture in the watershed. Additionally, surrogate or indicator constituents may be selected to provide efficiency. For example, toxicity testing may be used in-lieu of a broad pesticide screening. If toxicity is found in which a pesticide is suspected than toxicity identification evaluations may be used to hone in on the pesticide.

It is inappropriate and there is no scientific rationale to prescribe general monitoring requirements with respect to the number of samples, frequency, and analytical parameters. One size does not fit all, as every watershed is unique. Monitoring plans must be developed at the local level. The RWQCB should provide as much flexibility as possible and minimize reporting requirements to only those needed to demonstrate compliance or improvements in water quality. Flow monitoring should be reconsidered due to the prohibitive cost of obtaining these data (approximately $25,000 to establish a new stream gauging station) and its limited value. Flow monitoring can be used to calculate loads and is valuable in being able to discern variations in concentrations due to varying flow levels. However, the RWQCB regulates based on concentration and not load. Load is an issue for Total Maximum Daily Loads (TMDLs) and is beyond the scope of the conditional waiver. Where TMDL issues are involved they should be handled in a separate program. Any flow monitoring should be at the discretion of the watershed group and should be limited to existing flow monitoring stations.

The level of quality assurance (QA) will depend on the data quality objectives. It is not necessary to maintain a high level of QA throughout all phases of the monitoring. For example, some monitoring may be for internal use such as on-going water quality improvements or assessment of management measures. These data are for internal consumption and only need a minimal level of QA. Data submitted to the RWQCB for the purpose demonstrating compliance or improvement may need to have a higher level of QA.

The Department recommends a phased approach to data reporting and monitoring. The first step of a monitoring effort is the gathering of existing data and evaluation to determine what it reveals about the existing water quality conditions. Depending on the amount and detail of the data available, the next phase may be a cursory review of the land uses including cropping patterns and chemical usage. Based on this information, a monitoring plan can be developed for a level 1 assessment. This will involve monitoring at strategic locations in the watershed including the outflow to the watershed and at primary confluences. This information will allow future actions to be focused in subwatersheds and drainages that may have water quality deficiencies. It will also allow monitoring an implementation programs specific for the issues in the subwatershed to be developed.

A level 2 monitoring program can be developed at this stage. At each phase of monitoring development, a different question is being asked and monitoring design is developed to answer that specific question. At this point in the process an implementation plan will need to be developed and should include outreach, more detail inventory of cropping and chemical usage, inventory of management measures utilized in connection to the parameter in question, along with better definition of the drainage conveyance system. This information can be used to develop a refined monitoring program and to start the promotion and implementation of management measures. A risk evaluation system could also be developed, similar to that used by the Lodi-Woodbridge Wine Grape Growers. This is an excellent tool to make farmers aware of potential areas of concern that need to be considered and addressed.

Level 3 monitoring may be conducted at the farm level by producers using, to the extent possible, field kits and rapid assessment techniques such as nitrogen analysis kits and electro-conductivity meters. These data will have a low level of QC and is designed for educational purposes. Additional data may be collected with a higher level of QC to verify the effectiveness of the management measures. At the same time, water quality data will continue to be collected at the sub-watershed level to track progress toward meeting water quality goals.

Reporting to the RWQCB could be undertaken at each phase and could be restricted to summary reports of steps taken along with water quality data and QA procedures. We

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believe this process to be more efficient and cost-effective, while providing maximizing flexibility and least amount of regulatory burden to producers.